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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/629,141	07/29/2003	Jin-Won Kim	678-1197 (P10946)	6567

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Paul J. Farrell, Esq.
DILWORTH & BARRESE, LLP
333 Earle Ovington Boulevard
Uniondale, NY 11553

EXAMINER

ARTHUR JEANGLAUDE, GERTRUDE

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 06/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/629,141

Applicant(s)

KIM ET AL.

Examiner

Gertrude Arthur-Jeanglaude

Art Unit

3661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 3-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-2 are rejected under 35 U.S.C. 102(a) as being anticipated by the admitted prior art in the background of the invention.

As to claim 1, the admitted prior art in the background of the invention discloses in Fig. 1 an apparatus for detecting location of a movable body in a navigation system, the apparatus comprising: a map data detector (40 in Fig. 1) for detecting map information of a region corresponding to a location information in an external digital map storage on the basis of location information of the movable body, the location information being transmitted by sensors sensing location coordinates and traveling direction information of the movable body; a memory (30 as shown in Fig. 1) for storing the map information detected from the map data detector; a filter (44) as shown in Fig. 3 for computing an optimum location information of the movable body including road error included in the map information on the basis of the location coordinates and traveling direction information of the movable body transmitted by the sensors; and a map-matching unit (45) for receiving the optimum location information of the movable body from the filter and correcting the optimum location information by matching the optimum

location information and the map information stored in the memory (See specification, page 1, lines 24-31-page 2).

As to claim 2, The admitted prior art in the background of the invention discloses that the map data detector receives the location information of the movable body from a GPS sensor (10 as shown in Fig. 1) receiving a GPS signal, and detects the map information of region corresponding to the location information.

Allowable Subject Matter

Claims 3-9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art fails to disclose the filter comprises: a first filter for receiving the location information of the movable body from the GPS sensor receiving the GPS signal, computing a first location information of the movable body after receiving the traveling direction information, including a velocity and a traveling direction of the movable body from an inertia sensor and transmitting the computed first location information to the map-matching unit; a second filter for receiving road linear information about said map information matched with the first location information, computing a second location information of the movable body including road error after receiving the traveling direction information, including said velocity and said traveling direction of the movable body from the inertia sensor; and a third filter for receiving said first location information of the movable body from the first filter and said second location information of the movable body from the second filter, computing said optimum location information

of the movable body, and transmitting said optimum location information to the map-matching unit.

Claims 10-11 are allowed.

The prior art fails to disclose a method for detecting a location of a movable body in a navigation system, the method comprising the steps of: computing first location information of the movable body on the basis of the GPS/DR filter model; matching the first location information with the stored map information and extracting road linear information for where the movable body is located on the basis of the first location information and said matched map information; initializing a map constraint filter model on the basis of said traveling direction information of the movable body sensed by the sensors and said road linear information extracted in step (3); computing second location information of the movable body including a road error on the basis of a map-limited filter; 6) computing optimum location information of the movable body on the basis of the first location information of the movable body computed in step (2) and the second location information of the movable body computed in step (5); generating filter correction data for correcting a state and an error of the GPS/DR filter model and the map constraint filter model on the basis of the computed optimum location information; and; correcting the state and error of the GPS/DR filter model and the map constraint filter model by means of the filter correction data.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ichikawa (U.S. Patent No. 5,523,765) discloses a method and apparatus for detecting vehicle location for a vehicle navigation system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gertrude Arthur-Jeanglaude whose telephone number is (703) 308-7564. The examiner can normally be reached on Monday-Friday from 8:30 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Black can be reached on (703) 305-8233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GAJ

GAJ

May 29, 2004

Gertrude A. Jeanglaude
GERTRUDE A. JEANGLAUDE
PRIMARY EXAMINER